THE EFFECT OF THE ECONOMIC EDUCATION OF TEACHERS ON THE NUMBER OF ECONOMIC CONCEPTS REPORTED TAUGHT

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K. H.

DEDICATION

This study is dedicated to my wife Alouise and our children Lynn, Susan, Ruth, Ann, and Charles. Without their cooperation this study never could have been completed.

K. H.

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CHAPTER I

THE PROBLEM

The problem of developing economic understanding in a democracy is not simple; it is vital and very complex. Furthermore, it is a problem on which very little research has been done. There is a need for more information on the various aspects of economic education. In many areas of economic education there is not enough information available to make intelligent planning possible. Thus this study is dedicated to the improvement of economic education.

The General Statement of the Problem

Oklahoma State University is dedicated to the development of intelligent, capable citizens. The attainment of this goal by the University is accomplished directly by the education of its students and indirectly by its graduates who will teach others. The maintenance of efficient education requires a constant appraisal of the effectiveness of the curriculum as the curriculum is adjusted to new conditions. An illustration of this adjustment in the curriculum is evident in economic education. For example, some of the graduates from Oklahoma State University have had no courses in economic education; some have had three semester hours of Elements of Economics; some have had three hours of Principles of Economics; some have had six hours of Principles of Economics; some have had more than six hours of economics; and some have had

more than six hours of agricultural economics. Because of the differences in the economic education of graduates from Oklahoma State University, this problem is to be investigated: Does the economic education of the teachers who have been graduated from Oklahoma State University during the years 1955-56 and 1956-57 and who received teaching certificates from Oklahoma make a difference in the number of basic areas of economic understanding taught by them?

Hypothesis to be Tested

The study is designed to contribute information concerning the efficiency of instruction in the economic education of teachers. With this in view, the investigation will test the following hypothesis: The economic education of teachers does not affect the number of basic areas of economic understanding taught.

The Need for and Purpose of the Study

It is assumed that American citizens are expected to make intelligent decisions on economic matters ranging from governmental policies to the use of charge accounts. If this assumption be true, then economic education should be a part of every American's education. The burden of the general education of the masses falls on the teachers from grades one through twelve. The university, as an educational institution for teachers, is then faced with the problem of insuring an adequate general economic education for its graduates who are planning to teach.

There has been considerable experimentation with the program of economic education at Oklahoma State University. Courses such as Elements of Economics have been developed; other courses have been modified; and

requirements have been changed. There is a need for information concerning the effectiveness of the various economic-education choices now available to students entering professional education. This study is an effort to evaluate these choices.

The Scope of the Study

This study is limited in scope to those teachers who have been graduated from Oklahoma State University and have received Oklahoma teaching certificates in the years 1956 and 1957.

This study is limited to the claims that the teachers themselves make concerning their own teaching. No effort is made to determine any relative degree of accuracy concerning their claims. No effort is made to decide that any answer or groups of answers are either good or bad or right or wrong.

This study is not to be considered "proof" of what teachers are teaching. This is a study of what certain teachers, recent graduates of Oklahoma State University, claim that they are teaching.

This study is limited to selected economic topics, or concepts. It is based on the economic concepts developed in the study Key Understandings in Economics. Furthermore, it is very closely related to the Inventory of Economic Understanding,[1] which is also based on the study Key Understandings. The topics are generally identical with those in the "Inventory,"

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[1] Inventory of Economic Understanding prepared at Economic Education Workshops sponsored by Northwestern University, Illinois Curriculum Program, Illinois Council on Economic Education, and the Joint Council on Economic Education, 1815 Orrington Avenue, Evanston, Illinois, or the Joint Council on Economic Education, 2 West 46th Street, New York 36, New York. Instructions for evaluating the inventories are also available.

but much of the wording is less precise and less technical. This correlation with another study was done in order that this study be somewhat comparable to the Illinois study[2] and that the findings of the two groups might be compared.

The Plan of the Study

The study is a normative-survey of the economic concepts being taught by all those who receivedtheir bachelor's degrees in 1955-56 and 1956-57 from Oklahoma State University and who received Oklahoma teaching certificates.

A questionnaire of 102 economic topics was used to procure each teacher's opinions relative to economic concepts taught by him. Each teacher was expected to indicate on an evaluation scale how well he, in his own opinion, taught each topic.

The data, resulting from the responding teachers' opinions, were recorded on IBM cards for tabulation and summarization by machines. Simple chi-square tests were used to test the significance of the differences found.

The findings are reported in this study under three headings: (1) Response to the Questionnaire, (2) Characteristics of the Population, and (3) Interpretation of Hypothesis Tested.

Definitions

Economics is defined for the purpose of this study as a science in the management or administration of scarce resources for the satisfaction

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[2]Inventory of Economic Understanding. See Footnote 1.

of human needs. It is more than a body of information, a description of our economy, or a doctrine; it is, in addition, a method or technique of thinking applied to the allocation of all resources for human wants.

The terms economic concepts and economic understandings are used interchangeably and are sometimes referred to as economic areas or economic topics in relation to this study.

Basic economic areas to be investigated are defined as those that appear to be basic according to the Study on Economic Education for the Council for Advancement of Secondary Education (Washington, D. C., 1956) entitled "Key Understandings in Economics; the Derivation, Validation, and Evaluation; a Composite Test of Basic Economic Topics." The basic study will be referred to as Key Understandings or Key Understandings in Economics. This designation is necessary in order that it can be distinguished from a related study entitled "Economics in the Press," which is also part of the Study on Economic Education.

Graduates are those who have been graduated with bachelor's degrees in 1955-56 and 1956-57 from Oklahoma State University and who received Oklahoma teaching certificates in 1956 and 1957.

A teaching certificate is a license to teach. It is issued by the State Department of Education upon recommendation of the University.

Teachers, as used in this study, refers to those teachers included in this survey.

Economics courses are courses listed in the Oklahoma State University Bulletin for 1956 under Economics and under Agricultural Economics.

Principles refers to the courses Principles of Economics 213 and 223, a basic series of two courses totaling six hours.

Agricultural Economics Principles refers to the course Agricultural

Economics 203.

Agricultural Economics 203 is for all practical purposes the same as Economics 213, since both use the same text and both must be followed by Economics 223. Any difference in the two courses would probably be due to methods and illustrations, not content. It will be regarded as three hours of Principles and referred to as such.

Elements refers to the course Elements of Economics 233.

Elements of Economics 233 is a terminal course designed for those taking only one course. It attempts to cover in non-technical and non-mathematical terms most of the economic areas included in Economics 213 and 223. Special emphasis is placed upon methods and techniques by which future teachers can present and illustrate economic ideas.

Agricultural economics refers to those economics courses taught by the Department of Agricultural Economics. In the tables it is abbreviated to Ag. Econ.

Grade Levels or School Levels refer to the grades or levels of school from primary through the secondary school: primary grades, grades 1-3; intermediate grades, grades 4-8; junior high school, grades 7-9; high school, grades 9-12. There appears to be overlapping, but this is not a continuous scale but a classification of levels that possibly describes discrete and different areas.

CHAPTER II

THE SETTING

The problem of economic ignorance, which is also the problem of economic education, is very serious and very pertinent to modern times. It is an age-old problem which is still with us. An illustration of this is Shelley's sonnet "Ozymandias":

> I met a traveller from an antique land
> Who said: 'Two vast and trunkless legs of stone
> Stand in the desert. Near them, on the sand,
> Half sunk, a shattered visage lies, whose frown,
> And wrinkled lip, and sneer of cold command,
> Tell that its sculptor well those passions read
> which yet survive, stamped on these lifeless things,
> The hand that mocked them and the heart that fed.
> And on the pedestal these words appear--
> "My name is Ozymandias, king of kings:
> Look on my works, ye Mighty, and despair!"
> Nothing beside remains. Round the decay
> Of that colossal wreck, boundless and bare
> The lone and level sands stretch far away.'[1]

"Ozymandias" is more than interesting poetry. It is the story of a bad economic policy. The policies that were designed to make the might of this king (Rameses II of Egypt, r. 1292-1225 B. C.) live forever caused the complete oblivion of this once powerful ruler. Not only is the name of this mighty king forgotten, but the people who were to stand in awe forever no longer exist.

This fits the ideas of Hugh H. Bennett in his book Soil Conservation,

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[1]Percy Bysshe Shelley, "Ozymandias," Shelley's Complete Poems, (New York, 1901), p. 356.

written in 1939:

> The importance of the desert cities did not emerge until later Hellenic times; and under Roman protection, trade developed rapidly and agriculture thrived locally.
>
> To a large extent both were artificially created and lasted only until Roman protection ceased. When the trade with the East shifted to the sea routes, cities declined, fields were abandoned, and wind erosion increased.[2]

The people in those cities mentioned above were probably very aggressive in their opposition to Roman law and rule. The leaders who finally broke away from Roman power were probably feted as saviors of their country. Yet the policy they pursued led only to the decay of everything they had or hoped to have.

The United States, with its 1,904,000,000 acres of land, with its gross national product increasing each year, and with its great educational tradition, could be past all this concern about false economic policy. Mr. Bennett, however, said further:

> In addition to 50 million acres of cropland now virtually useless for further production, because it has been stripped of topsoil or riddled with gullies, another 150 million acres of arable land has declined far enough to make farming difficult or unprofitable. Over an additional area of nearly 680 million acres of all kinds of land, traces of water erosion are now discernible; and on much of this land the damage is constantly increasing in severity. . . . The survey indicates that this (wind erosion on the Great Plains Area from Canada to the Gulf) form of erosion is active in some degree over more than 200 million acres of farm and grazing land.[3]

With the American population increasing at the rate of about three millions a year, these facts should be the concern of every American. It is possible that the economic policies adopted now will determine the future of the grandchildren of the present Americans.

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[2]Hugh H. Bennett, Soil Conservation (New York, 1939), p. 24.

[3]Ibid., p. 9.

In this age, when security seems to be the goal of most Americans, the policies of the government should be the concern of every American. Quite modern is this quotation taken from An Economic Survey of Ancient Rome:

> In a word, the decline of Rome may in the last analysis be attributed to the failure of vision on the part of the landed gentry: their willingness during the Republic to betray the free yeomanry for the sake of profitable estates worked by slaves; and their readiness during the Empire to accept a totalitarian regime for the sake of prospect of personal safety.[4]

Bread and circuses, although they did take the minds of the people away from their troubles, only hastened the inevitable result of unsound economic policies. This is history. But does history repeat itself? Has present-day man with tremendous cultural heritage back of him shown signs of learning? Many keen minds have pondered this problem. Here is a comment by Henry George, one of the nineteenth century writers who wrote concerning contemporary economic life during the last part of that century:

> Though the schoolmaster has been abroad some time, the general power of tracing effect to cause does not seem a whit improved. The reaction toward protectionism, as the reaction toward exploded fallacies of government, shows this.[5]

In the mind of Mr. George, at least, contemporary man has a long way to go if he were to make economic sense.

This goal of making economic sense is the objective of the thinking, the studying, and the research being done in that area generally referred to as "economics." The purpose of "economic" training is to help people think intelligently in those areas requiring economic decisions. This is stated especially well in the following quotation by John Maynard Keynes:

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[4]Frank Tenney, ed., An Economic Survey of Ancient Rome, Vol. V (Baltimore, 1940), p. 304.

[5]Henry George, "How Modern Civilizations May Decline," Progress and

The Theory of Economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw conclusions. It is not difficult in the sense in which mathematical and scientific techniques are difficult; but the fact that its modes of expression are much less precise than these renders decidedly difficult the task of conveying it correctly to the minds of learners.[6]

An understanding of economics according to Mr. Keynes' definition would probably correct the situation that appeared to worry Mr. George in 1879. If one considers the increase in public education in the last seventy-five years, he might assume that the problem of overcoming economic ignorance is solved. This problem, however, has not been solved. As late as 1948 the Cooperative Study of General Education, involving 828 college freshmen in twelve colleges, reported the following:

The greatest deficiency in social knowledge tends to occur in the field of economics. Students are deficient in economic understanding in a way which indicates that this one of the social sciences needs more attention and more efficient instructional techniques in the program of general social studies education that at present prevails.[7]

The need for better economic education is a serious problem. Much more information is needed concerning the status of economic education at the present time. This study is designed to contribute information concerning economic education as it relates to certain phases of education at Oklahoma State University.

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[6]John Maynard Keynes, "Introduction," The Series of Cambridge Economic Handbooks, quoted in A. P. Hess, R. E. Gallman, John P. Rice, and Carl Stern, Outside Readings in Economics (New York, 1951), p. xvi.

[7]Albert William Levi, General Education in the Social Studies

CHAPTER III

THE PROCEDURE

The study is designed to answer the question: Does the economic education of the teachers make a difference in the number of basic areas of economic understanding taught by them? In order to answer this question the investigator formulated a specific hypothesis, defined a population, and designed a questionnaire. This chapter describes the specific hypothesis, the population questioned, the procedure used in the construction and use of the questionnaire, and the design for testing the hypothesis.

Specific Hypotheses Tested

The following general hypothesis was to be tested: The economic education of the teachers does not affect the number of basic areas of economic understanding taught.

This hypothesis is redefined in terms of fifty specific null hypotheses. No difference will be found in the number of economic areas taught by the following groups of teachers:

A. Teachers who teach in the primary grades when

   1. the group of teachers that has had no courses in economics is compared with the group that has had Elements of Economics only.

   2. the group of teachers that has had no courses in economics is compared with the group that has had three hours of Principles of Economics only.

3. the group of teachers that has had Elements of Economics is compared with the group that has had three hours of Principles of Economics only.

B. Teachers who teach in the intermediate grades when

1. the group of teachers that has had no courses in economics is compared with the group that has had Elements of Economics only.

2. the group of teachers that has had no courses in economics is compared with the group that has had three hours of Principles of Economics only.

3. the group of teachers that has had no courses in economics is compared with the group that has had six hours of Principles of Economics only.

4. the group of teachers that has had Elements of Economics is compared with the group that has had six hours of Principles of Economics only.

5. the group of teachers that has had Elements of Economics is compared with the group that has had six hours of Principles of Economics only.

6. the group of teachers that has had three hours of Principles of Economics only is compared with the group that has had six hours of Principles of Economics only.

C. Teachers who teach in junior high school when

1. the group of teachers that has had no courses in economics is compared with the group that has had Elements of Economics only.

2. the group of teachers that has had no courses in economics is compared with the group that has had three hours of Principles of Economics only.

3. the group of teachers that has had no courses in economics is compared with the group that has had six hours of Principles of Economics only.

4. the group of teachers that has had no courses in economics is compared with the group that has had more than six hours of economics.

5. the group of teachers that has had Elements of Economics only is compared with the group that has had three hours of Principles of Economics only.

6. the group of teachers that has had Elements of Economics only is compared with the group that has had six hours of Principles

7. the group of teachers that has had Elements of Economics only is compared with the group that has had more than six hours of economics.

8. the group of teachers that has had three hours of Principles of Economics only is compared with the group that has had six hours of Principles of Economics only.

9. the group of teachers that has had three hours of Principles of Economics only is compared with the group that has had more than six hours of economics.

10. the group of teachers that has had six hours of Principles of Economics only is compared with the group that has had more than six hours of economics.

D. Teachers who teach in high school when

1. the group of teachers that has had no courses in economics is compared with the group that has had Elements of Economics only.

2. the group of teachers that has had no courses in economics is compared with the group that has had three hours of Principles of Economics only.

3. the group of teachers that has had no courses in economics is compared with the group that has had six hours of Principles of Economics only.

4. the group of teachers that has had no courses in economics is compared with the group that has had more than six hours of economics.

5. the group of teachers that has had Elements of Economics only is compared with the group that has had three hours of Principles of Economics only.

6. the group of teachers that has had Elements of Economics only is compared with the group that has had six hours of Principles of Economics only.

7. the group of teachers that has had Elements of Economics only is compared with the group that has had more than six hours of economics.

8. the group of teachers that has had Elements of Economics only is compared with the group that has had more than six hours of agricultural economics.

9. the group of teachers that has had three hours of Principles of Economics only is compared with the group that has had six hours of Principles of Economics only.

10. the group of teachers that has had three hours of Principles of Economics only is compared with the group that has had more than six hours of economics.

11. the group of teachers that has had three hours of Principles of Economics only is compared with the group that has had more than six hours of agricultural economics.

12. the group of teachers that has had six hours of Principles of Economics only is compared with the group that has had more than six hours of economics.

13. the group of teachers that has had six hours of Principles of Economics only is compared with the group that has had more than six hours of agricultural economics.

14. the group of teachers that has had more than six hours of economics is compared with the group that has had more than six hours of agricultural economics.

E. That group of teachers having had no courses in economics when the group of teachers in

1. primary grades (1-3) is compared with the group in intermediate grades (4-8).

2. junior high school (7-9) grades is compared with the group in the high school (9-12).

F. That group of teachers having had Elements of Economics only when the group of teachers in

1. primary grades (1-3) is compared with the group in intermediate grades (4-8).

2. intermediate grades (4-8) is compared with the group in the junior high school (7-9).

3. junior high school (7-9) is compared with the group in the high school (9-12).

G. That group of teachers having had three hours of Principles of Economics only when the group of teachers in the

1. primary grades (1-3) is compared with the group in the intermediate grades (4-8).

2. intermediate grades (4-8) is compared with the group in the junior high school (7-9).

3. intermediate grades (4-8) is compared with the group in the high

4. junior high school (7-9) is compared with the group in the high school (9-12).

H. That group of teachers having had six hours of Principles of Economics only when the group of teachers in

1. intermediate grades (4-8) is compared with the group in the junior high school (7-9).

2. intermediate grades (4-8) is compared with the group in the high school (9-12).

3. junior high school (7-9) is compared with the group in the high school (9-12).

I. That group of teachers having had more than six hours of economics when the group of teachers in the

1. junior high school (7-9) is compared with the group in the high school (9-12).

J. That group of teachers teaching social studies when the group of teachers having had

1. Elements of Economics only is compared with the group having had three hours of Principles of Economics only.

2. Elements of Economics only plus those having had three hours of Principles of Economics only is compared with the group having had six hours of Principles of Economics only.

K. That group of teachers teaching business (typewriting and shorthand not included) when the group having had

1. six hours of Principles of Economics only is compared with the group having had more than six hours of economics.

L. That group of teachers teaching business (typewriting and shorthand not included) is compared with the group of teachers teaching social studies when

1. all the groups teaching business is compared with all the groups teaching social studies.

2. the groups of teachers with six or more hours of economics are compared.

M. That group of teachers teaching social studies is compared with the group of teachers teaching communication arts when

1. all the groups teaching social studies is compared with all the groups teaching communication arts.

N. That group of teachers teaching business is compared with the group of teachers teaching vocational agriculture when

1. all the groups teaching business is compared with all the groups teaching vocational agriculture.

The Population

The study included those teachers who have been graduated from Oklahoma State University and who received Oklahoma Teaching Certificates in the school years 1955-56 and 1956-57. This defined a population that would probably have current addresses for mailing purposes and current experiences in teaching for reporting purposes. This population had the further advantage of being such recent graduates that the economics courses they had studied would not have been greatly changed by the University professors teaching the courses.

A careful count indicated that 696 graduates during the 1955-56 and 1956-57 school years were known to have been qualified to teach. Of this group 371 received teaching certificates from the Oklahoma State Board of Education. Out of this group of 371, 73 were either known to be non-teachers or had left no address other than a University address. Since most of this latter group appeared to be young married women, it may be assumed that they too were non-teachers because of their family duties. The questionnaires were sent to a final group of 298 graduates.

The Questionnaire

The purpose of the questionnaire was to accumulate information that could be used in the evaluation of the economic education of Oklahoma State University graduates entering the teaching profession. The accumulated data are to represent the considered opinion of the respondents

concerning their own teaching in the basic areas of economic education. The purposes above led to the establishment of certain criteria for the construction and use of a satisfactory instrument:

1. It must be economical to use.
2. It must be usable for great numbers of people.
3. It must reflect as nearly as possible the opinions of the teacher answering it.
4. It must be basic and comprehensive.
5. It must be valid and reliable.

Criteria one and two above tended to rule out the use of personal contact as a method of acquiring information. The mailed survey appeared to be the method best suited to the criteria: it had low cost and could be used with almost any number of people. A mailed questionnaire also tended to minimize outside influence on the respondent. Because a mailed questionnaire tends to minimize the influence of the person seeking the answers, its validity and reliability could be more easily pre-tested with the evaluation groups. For these reasons a mailed questionnaire was constructed and used.

The Topics in the Questionnaire

In order that a questionnaire serve the purpose of this study and be useful, it would have to be basic and comprehensive. These factors were established by the following procedure:

A thorough search of the literature on economic education revealed that an excellent basic research on basic economics was done in 1956 by the Council for Advancement of Secondary Education. This was a Study on Economic Education entitled "Key Understandings in Economics." It

represents the views of "some 2,000 competent leaders of the major groups in the economy."[1] The compiling of the "Composite List" was done by a committee of six people, all highly competent people in economics or economic education.[2] The validation and evaluation were done by a group of 1,045 judges representative of the six pertinent economic and professional segments of the economy: farmers, businessmen, labor leaders, economists, educators, and high school teachers of economics.[3] It is assumed the reliability must have been high with six different people coding 10,000 topics over a period of five weeks.[4] Thus the study was basic, comprehensive, and carefully prepared as a basis for further work. It was the best available basis for a study of the basic areas of economic understandings.

The first draft of the schedule of topics that was to be the basis of the questionnaire (hereafter referred to as the schedule and upon the completion, the questionnaire) was based on the main categories of the "Composite Evaluated List of Basic Economic Topics," pages 14 to 19, in Key Understandings. The use of these main categories made a questionnaire that was short, comprehensive, and easily handled.

The first trial run indicated that each section was so brief that those who had no economics and those who had a sound economic background were confused. The first group did not know to what the schedule referred.

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[1]Council for Advancement of Secondary Education, "Key Understandings in Economics," Study on Economic Education (Washington 6, D. C., 1956), p. 13.

[2]Ibid., p. 8.

[3]Ibid., pp. 21-26.

[4]Ibid., p. 10.

The second group had had enough economics to know that each topic covered so much that they could not give a simple answer.

On the next trial run each topic had been carefully expanded until it made sense by being more complete. The results of this run indicated that it had become too complicated for many people to read and understand. Furthermore, it was still difficult for those with sound economic backgrounds to give a simple answer. The attempt to use the fourteen main categories was dropped.

The next schedule constructed was based on the first forty-seven topics of the rank order list of the judges' ratings.[5] This was to be considered the absolute minimum for ordinary economic understanding. The trial run on this indicated several weaknesses which had been more or less anticipated: the topics were technical and the schedule was long.

One could argue that, if a teacher could not understand economic terms, he was not teaching economics. This line of reasoning was generally accepted by professional economists but seemed unacceptable to non-economists. These two differences of opinion continued to appear, and the final draft was a compromise between these two views. It was anticipated, however, that these schedules would be going out to all groups of teachers with all variations of backgrounds. For this last reason the schedule was finally considered too technical.

The schedule had one additional weakness, which was very serious: it was not comprehensive. It left out too many items that would appear to be very essential, such as the "size and growth of the population," "business organization," "kinds and functions of money," "budgeting:

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[5]Ibid., p. 27.

person, family," and many others out of the eighty-eight listed.

The next schedule constructed was a schedule of the full 102 topics. This time the problem of technically accurate terminology on the one hand and oversimplification on the other hand was solved by a compromise. No item was rejected by either economists or non-economists as being completely unsuitable. Any adjustments made were effected for greater simplicity on the theory that "understanding" was of primary importance. On the assumption that people would sooner read and better understand many simple words than a few technically complex words, each topic was reworded and simplified if it were at all possible. Some of the topics were regrouped and some were separated until the result totaled 98 topics.

Dr. H. J. Bienvenu of the Joint Council on Economic Education had suggested that the Illinois Council on Economic Education, working with the Joint Council on Economic Education, had prepared an Economic Inventory[6] very similar to this last schedule of topics. A detailed comparison was made. The two were very similar. As a result of this comparison, the schedule was rearranged in order that the topics in the schedule would correspond to the major subtopics of the Inventory. This would give the schedule 102 topics to be evaluated in place of the original 98 topics. The increase in the number of topics was not enough to increase the number of pages in the questionnaire. The advantage was this: the responses to the schedule could now be compared somewhat directly with the responses to the Illinois Inventory, and the studies would be somewhat coordinated on the national level. With this decision, the topics

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[6]Illinois Council on Economic Education, Inventory of Economic Understanding (Evanston, Illinois, or New York).

in the schedule were determined. After this, several trial runs were made with a class of graduate students in order to get the best combination of simplicity and completeness in each topic statement.

The Evaluation Scale

The evaluation scale for each topic was another problem that required many trial runs before a satisfactory scale was devised. A good scale should be easy to understand, easy to score, and easy to read. At the same time, to reflect the opinion of the scorer, it should require thinking by the scorer before being scored.

A continuum scale of any sort has a tendency to be filled in the middle. This is particularly true if the scorer is busy, uninterested, or hurried. Using a one-to-five scale appears to accentuate this tendency because of the number three being in the middle. As a result of this and several trial runs, the following scale was devised:

NOT AT ALL . . . . . none, or as far as you can remember, none.

MENTIONED IT . . . . . mentioned incidentally, in reference to other material, or as a passing comment.

PARTIALLY . . . . . planned as part of your regular work but not investigated deeply or to any great extent.

THOROUGHLY . . . . . very well for the grade and ability of your pupils, spent considerable time and effort investigating the topic.

This scale has several advantages:

First, it has only four choices.

Second, it has words that appear to have meaning to most of the people in the trial runs. There was very little confusion as to what each scorer thought it meant in his own mind.

Third, it has flexibility. For those people who believe that economics is either understood and taught well or not understood and not taught, NOT AT ALL and MENTIONED IT could be classified as "not teaching" economics. PARTIALLY and THOROUGHLY were graduations of "having taught" economics. It becomes, in effect, a "yes" and "no" scale. For those who believed that any information is better than none and that people do learn some economics by merely hearing economic ideas mentioned incidentally, the NOT AT ALL is the only "not-taught" category. There is a tendency for the professional economist to be in the first group and the non-economist in the latter group. In this study NOT AT ALL and MENTIONED IT are regarded as not having taught the concept. PARTIALLY and THOROUGHLY are regarded as having taught. This method had the further advantage of balancing any tendency to score one of the middle two items.

Fourth, it can be arranged in a continuum.

Fifth, it can be arranged very conveniently to the immediate right of each topic. This appears to remove much of the confusion concerning which scale to use and how to use it.

Sixth, it is easily transferred to an IBM.

The Covering Letter

The covering letter (the letter accompanying the questionnaire) is the product of numerous revisions resulting from trial runs and suggestions from the evaluation groups. It is organized according to the rules of a good sales letter and has incorporated the pertinent suggestions from basic sources listed in the bibliography. The letter had the same trial runs with the same groups as the schedule

The Evaluation Groups

In addition to the committee members and the University specialists in statistics and surveys, four main groups were used as evaluation groups in the construction of the questionnaire as well as the study. The main formal group was a graduate seminar composed of men and women working in various doctoral programs. About half of this group was secondary school administrators or teachers. The others were teachers in higher education.

The second main group was an informal group composed of wives of college students living in "Veterans' Village," a University housing area for married students. These two above groups were particularly candid in their opinions.

The third group was composed of individuals from a senior class in teaching methods. This group was particularly valuable in answering specific questions.

The last group was composed of the faculty members of the Cushing, Oklahoma, Public Schools and the Temple, Oklahoma, Public Schools. This group was used only once; before the questionnaire was printed in its final form, a test run was made with all of these people completing the forms. A few minor changes were made as a result of their suggestions. Superintendent William Carr of Cushing was particularly helpful because he used the questionnaire as the basis of a faculty discussion and returned notes of the various comments.

The Mailing Procedure

The questionnaire was mailed to all 1956 and 1957 graduates from Oklahoma State University who received Oklahoma Teaching Certificates

and were not identified positively as non-teachers. This final mailing population of 298 graduates received the questionnaires and, unless some word was returned, all of the follow-ups.

The first follow-up was a card mailed about two weeks after the first letter. The first letter (with the questionnaire) and the first follow-up, a card, were mailed so that the addressee would receive it on the weekend. This survey competed with all the end-of-school reports; so timing was very important. The results of the two mailings were satisfactory, since 56 per cent was returned at the end of three weeks. The third follow-up was the original letter with the questionnaire attached. Noted across the top in longhand was this: "In case you misplaced the other copy" and signed with the initials "K. H."

Once the total mailing-population was complete, the names were placed on cards, arranged alphabetically, and numbered. This number was the only identification placed on the return envelope. As the returns came and were opened, the cards were taken from the original list and placed in the "returned list." Most of the cards were further identified by the area in which the addressee received his teaching certificate or the department from which he received his major studies. A record was kept of the mailing from which the returns appeared to be a response. This was necessary in order to determine whether a fourth follow-up would be necessary. The chi-square test was used to determine whether there was a significant difference when the various mailings were compared to returns from the (1) various colleges, (2) school levels, and (3) amounts of economic education. There was no significant difference; so it was assumed that the returns were in similar proportions. Any further returns would not change the conclusions and would be time-consuming and costly.

The Procedure for Analysis of the Data

If a study is to be understood, it must be written in terms that make sense to the readers. The sentiment in the Evaluation Groups appeared to be that statistical studies are complicated. Many expressed an immediate suspicion of any report in statistical terms. With this in mind, the investigator used only the simplest of statistics.

Discussions with Dr. Carl Marshal, Director of the Statistical Laboratory, and Dr. John Hamblen, Director of the IBM Computing Center, led to the selection of chi-square as the best choice. Statistically, it was satisfactory and, in this study, simple.

Most of the people in the Evaluation Groups could understand this idea. If there is no difference between two groups in the way they answer questions, then the answers they give should be in proportion to the people in the groups. They also understood the idea that there could be chance variations in the groups; and even though the results were slightly different, this difference was not important.

Thus the chi-square test of independence was selected. This test is a test to determine whether two groups differ to the extent that they are independent groups and not chance variations in one group. Furthermore, this test was limited to the use of a two-fold classification. The use of a "2 x 2" table has several advantages:

1. It is easy to understand; that is, the statistics involved are not complicated.

2. The relationships are easy to see. One group is obviously being compared with the other.

3. All the tables will have one degree of freedom, and chi-squares at the various levels of significance will be the same for each test: 3.84 at the 5% level; 6.64 at the 1% level, and

4. The evaluation groups appeared to understand the idea that any chi-square value equal to or greater than the values above indicated that the difference between the two groups was due to more than chance variations. That is, the difference is greater than one would expect from chance variations, and the difference probably is real.

The computations were made on chi-square worksheets. Each worksheet tested one hypothesis. The hypotheses were tested in the same order as they are listed in the Specific Hypotheses to be Tested, page 11.

CHAPTER IV

THE FINDINGS

The findings are reported in this chapter under three headings: (1) Response to the Questionnaire, (2) Characteristics of the Population, and (3) Interpretation of Data.

Section one is a brief report of the response from the population receiving the questionnaire and the follow-ups.

Section two, Characteristics of the Population, is a brief description of the population which responded to the questionnaire. The population is described here in order to present a picture of the groups being compared in section three.

Section three, Interpretation of Data, is the report of the chi-square comparisons of economic concepts taught by specific groups of teachers. Because statistical concepts are confusing to many people, the section is introduced by an explanation of what a chi-square test is and how chi-square differences are interpreted.

Response to the Questionnaire

At the final count, 168 teachers out of 298 returned usable reports (approximately 57%), and 26 teachers returned the reports with the statement that they had not taught (approximately 9%). Four teachers telephoned that they had not taught (approximately 1%). Seventeen envelopes were returned with the notation that the addressee had moved and left no

forwarding address or that the addressee was unknown. Eighty-three teachers (approximately 28%) apparently received the original questionnaire and both follow-ups, but they did not answer. Out of these eighty-three unanswered questionnaires, seven were returned during the next month, too late to be used in the survey. Six of these last seven were from primary teachers who had three or fewer hours of economics; one was from a vocational agriculture teacher.

Characteristics of the Population

Most of the primary-grade teachers, those teaching in grades one through three, had been enrolled in the College of Education and the College of Home Economics. With the exception of three out of twenty-nine, two specializing in social studies and one in the communication arts, the primary teachers tend to teach all courses.

A majority of the intermediate-grade teachers, those teaching in grades four through six, had been enrolled in the College of Education. A large minority had been enrolled in the College of Arts and Sciences. In the intermediate grades there were twenty-three teachers reporting. These teachers were about evenly divided between those teaching all courses and those teaching special areas. About a half of the intermediate teachers had had no economics.

The teachers in the junior high school level, grades seven through nine, were graduated from four different colleges: thirteen from the College of Education, six from the College of Arts and Sciences, and two each from the College of Business and the College of Home Economics. Out of the twenty-three on the junior high school level, twelve had no economics, and two had over six hours of economics.

The teachers in the high school group differed from the above groups in some respects: the ninety-three teachers reported degrees from all six colleges in the University. The College of Agriculture had graduated twenty-five; the College of Arts and Sciences, twenty-one; the College of Business, eight; the College of Education, twenty-two; the College of Home Economics, sixteen; and the College of Engineering, four. As far as the formal economic education of this group of teachers is concerned, twenty-eight out of the ninety-three had no economics courses; twenty-three had over six hours of agricultural economics; sixteen had six or more hours of economics. There were fifty-four teachers with three or fewer hours of formal training in economics.

In the area of courses composed of the communications, mathematics and sciences, and social studies are found the courses common to all high school pupils, regardless of the curriculum they take. In this area, many people feel, economic education should be taught. Forty-six teachers reported that they taught in one of these areas. Twenty-nine out of forty-six reported degrees from the College of Education and twelve from the College of Arts and Sciences. The forty-six teachers reported teaching: eight reported teaching social studies in the first six grades; two reported teaching the communication arts in the first six grades; ten reported teaching in junior high school; and twenty-six reported teaching in high school. When the formal economic education of these forty-six teachers who teach in the areas common to all high school students is considered, twenty-two, or about a half, have had no economics courses.

Explanation of Tests for Hypotheses

on the basis that, if the two groups were to answer a set of questions with the same answers, the difference between the two groups, when tested by chi-square, would be zero. That is, there would be no difference between the groups. For example, assume that two panels usually answered familiar questions identically. In one test, however, they had to guess at all the answers. The chance is very unlikely that the answers would be the same; there would very likely be some differences, and one group could have a higher score. This difference could be due to chance variations in the way answers were selected. At the next time the two panels guessed at the answers the results might be reversed, and the other group would have the higher score. The chi-square value of significance takes these chance variations into consideration.

An illustration of a difference between two scores that is not significant is in chi-square Table D, 1, in Appendix B, page 66. In this illustration one group of twenty-eight teachers who had no formal economics education reported teaching a total of 277 economic concepts. Another group of ten teachers who had three semester hours of Elements of Economics reported teaching a total of 113 economic concepts. The question to be answered by the use of chi-square was this: are the two totals (227 and 113) significantly different? The computed chi-square value is 1.58. The 5% chi-square level of significance is 3.84. Therefore it can be said that the difference in the number of economic concepts taught by the two groups of teachers is not significant at the 5% level. That is, a chi-square difference as small as 1.58 could have come from chance variations, and there is probably no real difference between the two groups.

A chi-square difference of 3.84 is said to have significance at the

five per cent level. That is, a difference that large could occur through chance five per cent of the time or once in every twenty trials. A chi-square difference of 6.64 is said to be significant at the one per cent (1%) level. That is, there is only one chance in a hundred that a difference that large would occur from chance variations. The one-tenth per cent (.1%) chi-square value is 10.83. That is, there is only one chance in a thousand that a difference that large would occur from chance variations, and the difference must be due to factors other than chance. The greater the difference between two groups tested by chi-square, the greater the computed chi-square value will be, and the less chance there is that the difference is not a real difference. In this study the chi-square 5% level of 3.84 is used to determine the minimum level of significance. Any difference equal to this value or larger is considered significant.

Interpretation of the Data

The basic hypothesis is that, when teachers are grouped according to their formal economic education there will be no significant difference in the number of economic concepts reported taught by each group of teachers. The groups used are these: teachers with no formal economics education, teachers with Elements of Economics only, teachers with Principles of Economics (three semester hours only), teachers with Principles of Economics (six semester hours only), and teachers with more than six semester hours of economics or agricultural economics. If results indicate that there is a significant difference, the hypothesis must be rejected. A chi-square difference greater than 3.84, the 5% chi-square level, is considered significant. The 1% chi-square level of 6.64 and the .1% chi-square level of 10.83 merely indicate greater degrees of certainty that the

computed difference is real and not due to chance.

In the primary grades no teacher reported six or more hours of economics. That group of teachers having had Elements of Economics reported teaching significantly more concepts than either the group having had no economics or the group having had three hours of Principles of Economics. The difference is significant, and the hypothesis of no difference is rejected. Since, however, only three teachers reported having had no economics, the reliability of that comparison should be questioned. Indicated here are the comparisons made:

	Computed chi-square
Elements of Economics versus no economics	24.45
Elements of Economics versus Principles of Economics, 3 hours	12.23

In the intermediate grades the groups of teachers having had economics courses reported teaching significantly more concepts than the group of teachers having had no economics. The hypothesis of no difference in the number of economic concepts taught is rejected. Indicated here are the comparisons made (3.84 is significant):

	Computed chi-square
No economics versus Elements of Economics	19.29
No economics versus Principles of Economics, 3 hours	4.05
No economics versus Principles of Economics, 6 hours	113.09

In the intermediate grades the group of teachers having had six hours of Principles of Economics only reported teaching significantly more concepts than did either of the groups of teachers that reported having had only three hours of economics (Elements of Economics or

Principles of Economics). The evidence indicates that the hypothesis of no difference is rejected. Since, however, only three teachers reported having had six hours of Principles of Economics, the reliability of the comparisons should be questioned. Indicated here are the comparisons made:

	Computed chi-square
Principles of Economics, 6 hours, versus Elements of Economics	27.89
Principles of Economics, 6 hours, versus Principles of Economics, 3 hours	40.95

In the junior high school groups of teachers having had economics reported teaching significantly more concepts than the group that reported having had no economics. Results indicate that the hypothesis of no difference in the number of economic concepts taught is rejected. Only three teachers, however, reported having had three hours of Principles of Economics, and only two teachers reported having had over six hours of economics. The comparisons involving these two groups of teachers should be questioned because of the lack of reliability. Indicated here are the comparisons made:

	Computed chi-square
No economics versus Elements of Economics	38.41
No economics versus Principles of Economics, 3 hours	51.08
No economics versus Principles of Economics, 6 hours	95.90
No economics versus over 6 hours of economics	32.43

When the groups of teachers in the junior high school that reported having had economics are compared among themselves on the basis of the number of economic concepts they reported teaching, there are no

significant differences. Results indicate that the hypothesis of no difference is supported. Because of the few teachers reporting having had three hours of Principles of Economics and over six hours of economics, comparisons involving these two groups ought to be questioned. Indicated here are the comparisons made (3.84 is significant):

	Computed chi-square
Elements of Economics versus Principles of Economics, 3 hours	.010
Principles of Economics, 3 hours, versus Principles of Economics, 6 hours	1.835
Principles of Economics, 6 hours, versus over 6 hours of economics	2.600

At the high school level, when the groups of teachers that reported having had three or fewer hours of economics are compared among themselves on the basis of the number of economic concepts they reported teaching, there is no significant difference. Similarily, when the groups of teachers that reported having had six or more hours of economics or agricultural economics are compared among themselves on the basis of the number of economic concepts they reported teaching, there is no significant difference. Results in both cases indicate that the hypothesis of no difference is supported when the groups are compared among themselves. Indicated here are the comparisons made (3.84 is significant):

	Computed chi-square
No economics versus Elements of Economics	1.58
Elements of Economics versus Principles of Economics, 3 hours	.237
Principles of Economics, 6 hours, versus over 6 hours of economics	1.858
Over 6 hours of economics versus over 6 hours of agricultural economics	1.89

When the groups of high school teachers that reported having had six or more hours of economics and those groups of high school teachers that reported having had three or fewer hours of economics are compared on the basis of the number of economic concepts each group reported teaching, the results indicate a significant difference. The hypothesis of no difference in the number of economic concepts taught is rejected. Indicated here are the comparisons made:

	Computed chi-square
No economics versus Principles of Economics, 6 hours	119.66
No economics versus over six hours of economics	44.22
Elements of Economics versus Principles of Economics, 6 hours	50.74
Elements of Economics versus over 6 hours of economics	21.44
Elements of Economics versus over 6 hours of agricultural economics	240.75

The number of economic concepts reported taught can vary with the school level as well as the economic education of the groups reporting. For this reason the basic hypothesis is restated: no difference will be found in the number of economic concepts reported taught by groups of teachers with the same economic education when they are grouped according to the school level at which they teach. These levels are the primary grades (1-4), intermediate grades (4-8), junior high school (7-9), and high school (9-12). If there is a significant difference, the hypothesis of no difference must be rejected. A chi-square difference greater than 3.84, the 5% value, is considered to be a significant difference. The 1% value of 6.64 and .1% value of 10.83 merely indicate greater degrees of certainty that the difference is not due to chance.

When teachers with no economics are grouped according to their

school level, the number of economic concepts reported taught by the intermediate group is significantly greater than the number reported by the primary group. The hypothesis of no difference is rejected. Similarly, the number of economic concepts reported taught by the high school is significantly greater than the number reported by the junior high school group and the hypothesis is rejected. The difference in the number of economic concepts reported taught by the intermediate group compared to the junior high school group is not significant, and in this case the hypothesis is supported. Since, however, only three teachers reported teaching in the primary group with no economics, the reliability should be questioned. Indicated here are the comparisons made (3.84 is significant):

	Computed chi-square
Primary versus intermediate	11.96
Intermediate versus junior high school	.027
Junior high school versus high school	15.39

When groups of teachers with Elements of Economics only are compared, the groups of teachers in the higher levels report teaching a significantly greater number of economic concepts than do the groups in the lower levels. The hypothesis of no difference is rejected. Since, however, there are only two teachers in the junior high school group, the reliability should be questioned in that comparison. Indicated here are the comparisons made (3.84 is significant):

	Computed chi-square
Primary versus intermediate	1.93
Intermediate versus junior high school	4.01
Junior high school versus high school	6.94

When the teachers with three hours of Principles of Economics only are grouped into the levels at which they reported teaching, results indicate that there are significant differences in the number of economic concepts reported taught in one level as compared with another level. The hypothesis of no difference is rejected. Indicated here are the comparisons made:

	Computed chi-square
Primary grades versus intermediate grades	13.53
Intermediate grades versus junior high school	14.00
Junior high school versus high school	14.07

When the teachers with six hours of Principles of Economics only are grouped into the levels at which they reported teaching, it was found that none of the primary teachers had reported six or more hours of economics. The intermediate grade group, the junior high school group, and the high school group were compared among themselves relative to the number of economic concepts each group reported teaching. The results indicate that there is no significant difference in the number of economic concepts reported taught. The hypothesis of no difference is supported. Because only three teachers reported teaching intermediate grades and having had six hours of Principles of Economics, the reliability of that comparison should be questioned. Indicated here are the comparisons made (3.84 is significant):

	Computed chi-square
Intermediate grades versus junior high school	1.91
Junior high school versus high school	.086

When teachers with more than six hours of economics are grouped into the levels at which they reported teaching, only two groups were formed: junior high school and high school. These two groups were compared on the basis of the economic concepts they reported teaching. The results indicated that there is no significant difference in the number of economic concepts reported taught by these two groups. The basic hypothesis of no difference is supported. The reliability should be questioned, however, since only two teachers reported at the junior high school level. Indicated here is the comparison made (3.84 is significant):

	Computed chi-square
Junior high school versus high school	1.000

The opportunity to teach economic concepts varies considerably from one subject-matter area to another. For this reason the basic hypothesis is restated in order to make comparisons between subject-matter areas as well as within subject-matter areas. The basic hypothesis restated is that no difference will be found in the number of economic concepts reported taught by different groups of teachers when the teachers are grouped according to the subject-matter area in which they reported teaching and the economic education they reported having had.

The subject-matter areas being compared are those commonly referred to as the area of "general education" (communication arts, mathematics and science, and social studies) and the two specialized areas that are commonly thought of as being strong in economic education, business, and vocational agriculture. If there is a significant difference, the hypothesis of no difference must be rejected. A chi-square difference

difference. The 1% chi-square value of 6.64 and the .1% chi-square value of 10.83 merely indicate greater degrees of certainty that the computed difference is real and not due to chance.

Within the area of social studies two groups were identified: those teachers who reported having had three hours of economics (three hours of Elements of Economics or three hours of Principles of Economics) and those teachers who reported having had six hours of Principles of Economics. When the number of economic concepts reported taught by each group was compared, a significant difference was found: that group with six hours of economics reported more concepts taught. The hypothesis of no difference is rejected. Indicated here is the comparison made:

	Computed chi-square
Elements of Economics plus Principles of Economics, 3 hours, versus Principles of Economics, 6 hours	70.55

When the number of economic concepts reported taught by business teachers (typing and shorthand teachers not included) was compared with the number of economic concepts reported by the social studies teachers, the results indicated no significant difference. The hypothesis of no difference is supported. Indicated here is the comparison made (3.84 is significant):

	Computed chi-square
Business versus social studies	1.47

When that group of teachers who reported having had six or more hours of economics courses and who teach business (typing and shorthand not included) are compared with that group of teachers who reported having had six or more hours of economics courses and who teach social

studies, there is no significant difference in the number of economic concepts reported taught by each group. The hypothesis of no difference in the number of economic concepts taught is supported. Indicated here is the comparison made (3.84 is significant):

	Computed chi-square
Business versus social studies	.135

When the number of economic concepts reported taught by social studies teachers is compared with the number of economic concepts reported taught by teachers in the communication arts, the results indicate a significant difference. Social studies groups reported teaching significantly more concepts. The hypothesis of no difference in the number of economic concepts taught is rejected. Indicated here is the comparison made:

	Computed chi-square
Social studies versus communication arts	216.53

When the number of economic concepts reported taught by business teachers (typing and shorthand not included) is compared with the number of economic concepts reported taught by vocational agriculture teachers, the results indicate no significant difference. The hypothesis of no difference is supported. Indicated here is the comparison made (3.84 is significant):

	Computed chi-square
Business versus vocational agriculture	.891

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Summary

The problem of developing economic understanding in a democracy is vital and complicated. It involves the development of economic understanding by every American citizen. If it is essential for every citizen to have economic understanding, it is probably the duty of the teachers in the American education system to insure an adequate economic education. This the teachers can do only if they themselves are adequately prepared.

The problem of the adequate preparation of teachers at Oklahoma State University has resulted in a constantly developing curricula for teachers. One of these developments in the area of economic education is a terminal course in economics entitled "Elements of Economics 233." It is a three-semester-hour course designed for those prospective teachers who will take no more courses in economics. This course is one of several choices that prospective teachers can make as a basic course in economics. For this reason the following problem was investigated: Does the economic education of the teachers who have been graduated from Oklahoma State University during the school years 1955-56 and 1956-57 and who received Oklahoma teaching certificates make a difference in the number of basic areas of economic understanding taught by them?

The study was designed to contribute information concerning the

effectiveness of instruction in the economic education of teachers. With this purpose in view, the investigator tested the following general hypothesis: the formal economic education of the teachers does not affect the number of basic areas of economic understanding taught. This general hypothesis was then redefined in terms of fifty specific null hypothesis to be tested.

In order to procure the information necessary to test the fifty hypotheses,the investigator constructed a questionnaire of 102 specific topics, or concepts, basic to economic understanding. This questionnaire was used as the tool to acquire the opinion of each teacher concerning the economic concepts taught by him. Based on the data secured, chi-square tests were used to determine whether there were significant differences in the number of economic concepts taught when groups of teachers are compared on the basis of their formal economic education.

The population to be tested was that group of teachers who had been graduated from Oklahoma State University and who had received Oklahoma teaching certificates in 1956 and 1957. This group would tend to have current addresses for mailing purposes and recent experiences for accurate reporting of the economic concepts they taught. This group had the further advantage of being recent students, and the various economics courses they studied would not have changed beyond the abilities of the University professors to evaluate the courses on the basis of the findings of this study.

The findings indicate that the economic education of the teacher does make a difference in the number of economic concepts taught.

In the primary grades the teachers were classified into three groups: a group having had no formal economics education, a group having had a

three-semester-hour course in Elements of Economics, and a group having had a three-semester-hour course in Principles of Economics. There was a significant difference among the three groups, and that group having had Elements of Economics reported the largest number of economic concepts taught.

In the intermediate grades the teachers were classified into four groups: a group having had no formal economic education, a group having had three semester hours of Elements of Economics, a group having had three semester hours of Principles of Economics, and a group having had six semester hours of Principles of Economics. Any one of the groups having had a course in economics reported teaching significantly more concepts than the group with no economics education. The group with six hours of Principles of Economics reported teaching significantly more concepts than did either the group with Elements of Economics or the group with three hours of Principles of Economics.

In the junior high school, as in the intermediate grades, the groups of teachers having had economics courses each reported teaching significantly more concepts than did the group with no formal economics education. In the junior high school, however, it appears to make little difference whether teachers have three hours or six hours of economics courses.

In the high school there was no significant difference among the groups of teachers with three or fewer semester hours of economics education. Similarly there was no significant difference among the groups of teachers with six or more hours of economics or agricultural economics courses. When, however, any one of the groups with three or fewer hours

more hours of economics or agricultural economics courses, there was a significant difference in the number of economic concepts taught. Those groups of teachers with six or more hours of economics or agricultural economics courses reported significantly more concepts taught.

There is probably a relationship between grade levels and concepts taught that would affect the reporting of the number of concepts taught. Indicated below is the influence of grade level when the economics education of the teacher is held constant:

When the fifty-four teachers who reported having had no formal economics education are compared by school level, the group of teachers in intermediate grades (grades 4-8) reported teaching significantly more concepts than did the group of teachers in the primary grades (grades 1-4); and the group of teachers in the high school level (grades 9-12) reported teaching significantly more concepts than did the group of teachers in the junior high school level (grades 7-9). There was no significant difference in the number of economic concepts reported taught by the teachers in the intermediate group compared with the junior high school group.

When the twenty-five teachers who reported having had Elements of Economics only are compared by school level, the total economic concepts reported taught by the primary grades teachers is not significantly different from the total reported by the teachers at the intermediate grade level. When the total concepts reported taught by each of the groups of teachers in the intermediate grade level, the junior high school level, and the high school level are compared among themselves, there is a significant difference among the three levels: the group at the high school level reported the most concepts taught, and the group at the

intermediate level the least.

When the forty-one teachers who reported having had the three-semester-hours of Principles of Economics only are compared by school level, the teachers in the higher school levels reported teaching significantly more concepts than the groups of teachers in any of the lower levels: high school teachers reported more than junior high school teachers; junior high school teachers more than intermediate grade teachers; and intermediate grades teachers more than primary grades teachers.

When those teachers who reported having had six-semester-hours of Principles of Economics only are compared by the school level at which they teach, there is no significant difference in the total number of economic concepts reported taught in each of the levels: intermediate grades level, junior high school level, and the high school level.

When the seven teachers who reported having had more than six hours of economics education are compared by school level, there is no significant difference in the number of economic concepts reported when the total in the junior high school level is compared to that total in the high school level.

Recommendations for Further Consideration

As a result of the study, evidences of possible relationships not directly related to the study appeared. The possibilities that were suggested by the study are important and deserve a place in further considerations of economic education:

1. It is possible that a six-semester-hour course in Elements of Economics for teachers would be more useful than the present six-semester-hours of Principles of Economics.

2. It is possible that the teachers in vocational agriculture would profit from a six-hour course in agricultural economics designed especially for agriculture teachers.

3. It is possible that the greatest improvement in economics education in high school would come from the requirement that all teachers teaching courses in social studies areas have six hours of economics.

4. It is possible that economics education in high school would be improved if teachers in mathematics and sciences were required to have at least three semester hours of economic education.

5. It is possible that school systems desiring an in-service program of economic education could use the questionnaire as a means of arousing interest as well as an outline of subject areas to be studied.

6. It is possible that the questionnaire could be used as an instrument to evaluate the effectiveness of the complete program of formal in-service economic education.

7. It is possible that the questionnaire could be used as the basis of a study of all the University courses that contribute to economic education. Students in each class could be asked this question: As the result of having taken this course, how well do you think you could teach each of these economic concepts? The instructors of each of these courses would then be asked this question: As the result of having taken this course, how well do you think your students should be able to teach these concepts?

8. It is possible that the questionnaire could be used as the basis of a study of an entire school system in order to locate economic areas omitted or not stressed sufficiently.

BIBLIOGRAPHY

American Railroads, Their Growth and Development. Washington, D. C.: Association of American Railroads, 1956.

Aristotle. Politics. Translated by H. Rockham. Cambridge: Harvard University Press, 1932.

Baker, G. Derwood. The Business Educator's Responsibility for Economic Education. Tenth Annual Delta Pi Epsilon Lecture, Chicago, Illinois, December 28, 1951. Dallas: South-Western Publishing Company, 1952.

_____. "The Joint Council on Economic Education," The Journal of Educational Sociology, XXIII (March, 1950), 389-396.

Bennett, Hugh H. Soil Conservation. New York: McGraw-Hill Book Company, 1939.

Branch, E. Douglas. The Hunting of the Buffalo. New York: D. Appleton and Company, 1929.

Browsky, Don. "Classroom Experiences for Economic Competence," California Journal of Secondary Education, XXXI (1956), 180-182.

Burrows, Albert H. "Economics Study and General Education," Social Studies, XLVIII (April, 1957), 115-120.

Carskadon, Thomas R., and George Soule. U. S. A. in New Dimensions, The Measure and Promise of America's Resources. A Twentieth Century Fund Survey. New York: The Macmillan Company, 1957.

Cuber, J. F., and J. B. Gerberich. "A Note on Consistency in Questionnaire Responses," American Sociological Review, XI (1946), 13-15.

DeVesta, Francis J. "Problems in the Use of Questionnaires for Studying the Effectiveness of Educational Programs," Educational and Psychological Measurements, XIV (1954), 138-150.

Dewhurst, J. Frederick, and associates. America's Needs and Resources: A New Survey. New York: The Macmillan Company, 1957.

Dodd, J. H. "What Values May Be Derived from a Study of Economics?" The Balance Sheet, XXXVII (January, 1956), 210-212.

"Economic Education in the Grades," Elementary School Journal, LVIII (November, 1957), 70-71.

Economic Statistics Bureau. The Handbook of Basic Economic Statistics, 1957. Annual Edition, XI, No. 1. Washington, D.C.: Economic Statistics Bureau, 1957.

"Economics in General Education," Round Table Report of the Committee on the Teaching of Elementary Economics. American Economic Review, XLI (May, 1951), 697-716.

Economics in the Press, A Survey of Magazines and Newspapers for Economic Terms. Washington, D. C.: Council for Advancement of Secondary Education, 1956.

Educational Policies Commission. The Purposes of Education in American Democracy. Washington, D. C.: Educational Policies Commission, 1938.

Faulkner, Harold Underwood. American Economic History. New York: Harper and Brothers, 1954.

Federal Reserve Chart Book on Financial and Business Statistics, Historical Supplement. Washington, D. C.: Board of Governors of the Federal Reserve System, September, 1957.

Frank, Tenney (ed.). An Economic Survey of Ancient Rome, V. Baltimore: The Johns Hopkins Press, 1940.

George, Henry. Progress and Poverty. New York: Robert Schalkenback Foundation, 1955.

_____. Social Problems. New York: Doubleday, Page, and Company, 1911.

Gescheider, Wm. C. "The Study of Economic Education of the Council for Advancement of Secondary Education," Educational Forum, XX (Nov. 1955-May 1956), 171-174.

Good, Carter V., A. S. Barr, and Douglas E. Scates. The Methodology of Educational Research. New York: Appleton-Century-Crofts, Inc., 1941.

Gunderson, Sherman B. "Weaknesses of Current Economic Education," Social Education, XX (1956), 15-18.

Hall, Robert King, and J. A. Lauwerys (eds.). Education and Economics, The Yearbook of Education, 1956. New York: World Book Company, 1956.

Hancock, John W. "An Experimental Study of Four Methods of Measuring Unit Costs of Obtaining Attitude Toward the Retail Store," Journal of Applied Psychology, XXIV (1940), 213-230.

Hess, Arleigh P., Jr., and others. Outside Readings in Economics. New York: Thomas Y. Crowell Company, 1951.

Inventory of Economic Understanding. Evanston, Illinois: Northwestern University, or New York: Joint Council on Economic Education.

Jacob, H. E. Six Thousand Years of Bread. New York: Doubleday, Doran, and Company, 1944.

Jacoby, Neil H., and others. "Economics in the Curricula of Schools of Business," American Economic Review, XXXXVI (March-May, 1956), 551-581.

Jones, Galen. "A Study of Economic Education," The Balance Sheet, XXXVII (May, 1956), 397-398, 401.

_____. "A Study on Economic Education," NEA Journal, XXXXIV (May, 1955), 305.

_____. "Our Study on Economic Education," National Association of Secondary-School Principals Bulletin, XXXXI, Part 2 (April-May, 1957), 303-306.

Keiser, Norman F. "The Role of Economics in General Education," Journal of General Education, IX (April, 1956), 179-187.

Key Understandings in Economics, Derivation, Validation, and Evaluation of a Composite List of Basic Economic Topics. Washington, D. C.: Council for Advancement of Secondary Education, 1956.

Kramer, Robert C., and James D. Shaffer. "The Case for the Mail Survey," Journal of Farm Economics, XXXVI (November, 1954), 575-589.

Lawrence, John D. "Developing Economic Competence of Pupils in Secondary Schools: A Symposium," California Journal of Secondary Education, XXXI (1956), 170-185.

Lee, Baldwin, and Galen Jones. "Toward Economic Literacy," NEA Journal, XXXXVI (April, 1957), 248-249.

Levi, Albert W. General Education in the Social Studies. Washington, D. C.: American Council on Education, 1948.

Lewis, Ben W. "Economic Understanding: Why and What," The American Economic Review (May, 1957). Reprinted by Lowell Harris in Selected Readings in Economics. Englewood, New Jersey, 1958.

Longworth, Donald S. "Use of a Mail Questionnaire," American Sociological Review, XVIII (1953), 310-313.

Lovenstein, Meno. "The Professor Goes to High School," NEA Journal (December, 1957), 585-586.

McKee, C. W., and H. G. Moulton. A Survey of Economic Education. Washington, D. C.: The Brookings Institute, 1951.

McNemar, Quinn. "Opinion Attitude Methodology," Psychological Bulletin, XXXXIII (July, 1946), 289-374.

_____. Psychological Statistics, Second Edition. New York: John Wiley and Sons, Inc., 1955. 229-231.

Melby, Ernest O. "Economic Education is a Must," The Journal of Educational Sociology, XXIII (March, 1950), 378-388.

Metzner, Helen, and Floyd Mann. "Effects of Grouping Related Questions in Questionnaires," Public Opinion Quarterly, XVII (1953), 136-141.

Mooren, Robert L., and John W. M. Rothney. "Personalizing the Follow-Up Study," Personnel and Guidance Journal, XXXIV (September, 1955-May, 1956), 409-412.

Nanassy, Louis C. "Economic Education in Elementary Schools," The National Business Education Quarterly, XXII (March, 1954), 15-29.

National Education Association, Committee on Social-Economic Goals of America. Implications of Social-Economic Goals for Education. Washington, D. C.: N.E.A., 1937.

Nixon, John E. "The Mechanics of Questionnaire Construction," Journal of Educational Research, XXXXVII (1954), 481-487.

Parten, Mildred. Surveys, Polls, and Samples: Practical Procedures. New York: Harper and Brothers, 1950.

Plato. The Republic. Translated by Benjamin Jowett. New York: The Heritage Press, 1944.

Public Education and the Future of America. Washington, D. C.: Educational Policies Commission, 1955.

The Public Opinion Index for Industry. The High School Market for Economic Education. Princeton: Opinion Research Corporation, 1951.

Reed, Floyd K. "The Mailed Inquiry and Methods of Increasing Returns," Journal of Farm Economics, XXXI, Part 2 (November, 1949), 1265-1275.

Rogge, Benjamin A. "Economics in Schools," American Economic Review, XXXXVII, Part 1 (March-May, 1957), 682-691.

Roll, Eric. A History of Economic Thought. New York: Prentice-Hall, Inc., 1942.

Shelley, Percy Bysshe. "Ozymandias," Shelley's Complete Poems. New York: Houghton, Mifflin Company, 1901.

Singer, H. W. "Economic Considerations," Yearbook of Education, 1954. Yonkers-on-Hudson, New York: World Book Company, 1954.

"3-Year Study on Economic Education," The Balance Sheet, XXXVI (January, 1955), 230.

Troelstrup, Arch W. "Economic Education: A Requisite of Citizenship," Education Digest, XIX (April, 1954), 46-48.

Troops, Herbert A. "Predicting the Returns from Questionnaires: A Study in the Utilization of Qualitative Data," Journal of Experimental Education, III (September, 1934-June, 1935), 204-215.

Turabian, Kate L. A Manual for Writers of Dissertations. Chicago: University of Chicago Press, 1937.

U. S. Bureau of the Census. Historical Statistics of the U. S., 1789-1945, A Supplement to the Statistical Abstract of the U. S. Washington, D. C.: U. S. Government Printing Office, 1949.

U. S. D. A. The Agricultural Estimating and Reporting Services of the U. S. D. A. Misc. Publication No. 703. Washington, D. C.: U. S. Government Printing Office, 1949.

Wagner, Lewis E. "Testing Economic Knowledge and Attitudes," National Association of Secondary-School Principals Bulletin, XXXX, Part 2 (May, 1956), 120-132.

Wert, James E., Charles O. Neidt, and J. Stanley Ahman. Statistical Methods in Educational and Psychological Research. New York: Appleton-Century-Crofts, Inc., 1954.

Widgerson, Harry I. "So You're Going to Send Out a Questionnaire?" The Nation's Schools, LIX, No. 1 (January, 1957), 46-47.

Wilde, E. Irving. "Deficiencies in Economic Understandings," The Journal of Business Education, XXIX (January, 1954), 161-162, 168.

Youth's Knowledge of the U. S. Economy and Related Attitudes, Report of Poll No. 42 by the Division of Educational Reference, Purdue University. Purdue Opinion Panel, August, 1955.

APPENDIX A

THE QUESTIONNAIRE WITH THE COVERING LETTER

AND THE FIRST FOLLOW-UP

OKLAHOMA STATE UNIVERSITY
COLLEGE OF EDUCATION
STILLWATER

DEPARTMENT OF EDUCATION

Dear

Young people are acquiring a certain amount of economic understanding. We, as educators, are not sure how or where this economic understanding is acquired.

The attached questionnaire is an attempt to discover the levels at which certain economic concepts are being taught in our schools. Your cooperation is necessary if this rather important study is to be completed. Similar studies are being conducted in other states. It will take about fifteen minutes of your time.

You were selected because of your teaching field. It is necessary to have representative opinions from all grades and from all teaching areas or fields. Similar forms are being sent to other of your classmates of Oklahoma State University of 1956 and 1957. This should give us a reliable picture of one aspect of present-day economic education.

Will you help by indicating your professional opinion and returning the questionnaire? Your immediate response is necessary if this study is to be completed.

Thank you for your cooperation.

Sincerely yours,

Kenneth Hillier

DIRECTIONS FOR COMPLETING THE INVENTORY

When you have checked the necessary items to the right and on the following sheets, return the forms in the enclosed envelope. (If you have not taught, please return the forms.)

This questionnaire has been designed to accomplish several purposes:

1. When the form is returned, it will be combined with other reports to give a picture of what and where economic understandings are being taught in our schools.
2. The summary to be compiled will be available to local schools and school systems for use in appraising the scope and sequence of their programs of economic education.
3. The completed picture can be used by the various colleges and universities as a standard or base on which to evaluate their own programs.

Explanation of scale used:

scale	explanation
NOT AT ALL	none, or as far as you can remember, none.
MENTIONED IT.....	mentioned incidentally, or in reference to other material, or as a passing comment.
PARTIALLY.....	planned as part of your regular work, but not investigated deeply or to any great extent.
THOROUGHLY.....	very well for the grade and ability of your pupils, spent considerable time and effort investigating the topic.

This is in no way an evaluation of you, your teaching, or your school system. There are no "right" or "wrong" answers. What I want is a professional description.

You may sign this if you wish. Your name, however, will not be used. Machines will handle all data.

1. WHICH LEVEL DO YOU TEACH? (check one or more if appropriate):

1. Pre-primary ..... ____
2. Primary (grades 1-3)..... ____
3. Intermediate (grades 4-6)..... ____
4. Intermediate (grades 4-8)..... ____
5. Junior high (grades 7-8)..... ____
6. Junior high (grades 7-9)..... ____
7. High school (grades 9-12)..... ____
8. Senior high (grades 10-12)..... ____
9. Junior College..... ____
0. I haven't taught..... ____

Other..... ____

2. HOW MUCH ECONOMICS HAVE YOU HAD? (check one or more if appropriate):

1. None..... ____
2. THREE hours of ELEMENTS (econ. 233)..... ____
3. THREE hours of PRINCIPLES (econ. 213)..... ____
4. SIX hours of PRINCIPLES (econ. 213, or Ag. econ. 203, and econ. 223)..... ____
5. MORE than SIX hours of econ. from the COLLEGE OF BUSINESS..... ____
6. MORE than SIX hours of AG. ECON. ..... ____

3 FROM WHICH COLLEGE DID YOU GET YOUR DEGREE? (check one):

1. College of Agriculture..... ____
2. College of Arts and Sciences..... ____
3. College of Business..... ____
4. College of Education..... ____
5. College of Home Economics..... ____
6. College of Engineering..... ____
0. Other:_____ ____

RATING SCALE REMINDER

for the next pages:

NOT AT ALL.....	none, as far as you can remember.
MENTIONED IT...	incidentally, in reference to other material, as a passing comment.
PARTIALLY.....	part of regular work, but not deeply, or to any great extent.
THOROUGHLY.....	very well considering your students, spent considerable time and effort.

Considering the grades you teach, how thoroughly did you teach in the following areas: (indicate by checkmarks)

5. The identification of BASIC PRODUCTIVE RESOURCES (labor, natural resources, capital, know-how)?
   not at all.... ____
   mentioned it. ____
   partially.... ____
   thoroughly.. ____

6. The productive resources of your community and state and the United States and the world?
   not at all.... ____
   mentioned it. ____
   partially.... ____
   thoroughly.. ____

7. The scarcity of productive resources compared with men's wants?
   not at all.... ____
   mentioned it. ____
   partially.... ____
   thoroughly.. ____

8. The relation of productive resources to standard of living (quality and quantity of labor, natural resources, capital, knowledge, skills)?
   not at all.... ____
   mentioned it. ____
   partially.... ____
   thoroughly.. ____

9. The relation of savings and investment to the finding of new resources, more factories and equipment, more knowledge, better skills?
   not at all.... ____
   mentioned it. ____
   partially.... ____
   thoroughly.. ____

10. The comparison of savings and investment in the United States with other countries in relation to development?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly.. ____

11. The conservation of productive resources such as natural resources, capital resources, and human resources?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly.. ____

12. The meaning of specialization (division of labor)?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly.. ____

13. The development of specialization from primitive to industrial societies?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly.. ____

14. The effects of specialization on the individual in respect to efficiency, monotony, interdependence, trade and exchange, money and cooperation?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly.. ____

15. The relation of specialization to mass production, mass markets and world trade?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly.. ____

Considering the grades you teach, how thoroughly did you teach in the following areas: (indicate by checkmarks)

16. The ideas of specialization by region, process, job, etc. (The "wheat states", the "oil centers", the "milling centers", "rail centers")?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly... ____

17. "Automation"?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly... ____

18. The definition of "economic system"--the organization of society for production and distribution of goods and services:
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly... ____

19. The chief characteristics of the U. S. Economic system, such as: the amount and variety of its products, its ups and downs, its need for expansion, and private enterprise?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly... ____

20. The basic institutions of a private enterprise system: private ownership and control of property, and freedom of contract?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly... ____

21. The importance of individual initiative and individual decisions as producer, consumer, and voter?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly... ____

22. The roles of the market, prices, profits, and competition in deciding what our system produces and how it distributes it?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly... ____

23. The degree to which we use governmental rules and regulations in our economic system?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly... ____

24. The measurement of our nation's production, such as "national income" or "gross national product (GNP)"?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly... ____

25. The sources of personal income: wages and salaries, farm income, professional fees, rents, dividends and interest, social security, relief, military pensions?
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly... ____

26. The nature of personal income (disposable income, income used for goods and services, taxes, savings):
    not at all.... ____
    mentioned it. ____
    partially.... ____
    thoroughly... ____

teach in the following areas: (indicate by checkmarks)

27. The importance to our economy of such as consumer's expenditures, business investment, government purchase of goods and services?
28. Real income as compared to money income?
29. Income per head or per family?
30. The national income of the United States?
31. How money came to be used; how it developed with specialization: as a medium of exchange? for measuring value? for storing purchasing power?
32. What makes good money (durability, portability, steadiness in value)?
33. The kinds of money in the U.S. (coins, paper money, checking accounts)?
34. The definition of "gold standard"?
35. Our banking system, such as national banks and state banks, our commercial system, and the Federal Reserve System?
36. The quantity of money is increased or decreased by loan policies, demands by business and consumers, and the powers of the government?
37. The changes in the rate of money use, e.g. rapid spending as prices rise and hoarding in depressions?

not at all.... _____
mentioned it. _____
partially.... _____
thoroughly.. _____

teach in the following areas: (indicate by checkmarks)

38. The importance of banks to community and nation, e.g., a place for savings, checking accounts, borrowing money, and aid to the federal government in its financing and regulating?
39. The "other agencies" dealing with loans and savings, e.g. savings and loan associations, credit unions, private loan agencies like Household Finance, etc., GI loans, FHA, postal savings?
40. The kinds of business organizations such as proprietorships, partnerships, corporations (private and public), and co-operatives?
41. How business contributes to our economic life? How it brings together labor, capital and raw materials to fill our wants? How it aids society by taxes and technological advances?
42. The problems of business in our economic life? Small business? Monopoly--anti-trust laws? "Unfair competition? Capital formation? Advertising?
43. The kinds and nature of local businesses?
44. Why government performs certain economic functions such as making and enforcing rules and standards concerning business, labor, food, safety; or builds highways, armies, public housing, etc.?
45. The character and size of government expenditures?
46. How governmental expenditures affected private business, the total production of goods and services, and the purchasing of consumers?
47. The kinds of taxes and their advantages and disadvantages (income taxes, profits taxes, real estate taxes, sales taxes, excise taxes, import taxes)?
48. The policies and effects of governmental taxation, borrowing, deficits and surpluses, and national debt?

not at all.... _____
mentioned it. _____
partially.... _____
thoroughly.. _____

teach in the following areas: (indicate by checkmarks)

49. The government economic enterprises such as housing (mortgages and loans, public housing), public utilities (TVA, water systems, etc.), atomic energy, toll roads, schools and universities, post office?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

50. Why labor organizations developed in the United States?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

51. The history of labor unions in the United States?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

52. The number and percentages of workers in labor unions in the U.S. ?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly . ____

53. The kinds of unions (craft and industrial)?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

54. The methods by which unions obtain their objectives? Collective bargaining? Mediation? Arbitration? Strikes, work-stoppages, walk-outs? Political action? Restrictions on supply of labor?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

55. The laws affecting labor unions, e.g., Railway Labor Act, Wagner Act, Taft-Hartley Act?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

56. The internal problems of labor unions, e.g., leadership, membership participation, jurisdictional disputes?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

57. The purpose of labor unions, e.g. the protection of wages to labor, to handle complaints, to give "status" to members, educational and social benefits?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

58. The labor unions and public interest, e.g. industry-wide bargaining, strikes in basic industries?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

59. The unions in the local community?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

teach in the following areas: (indicate by checkmarks)

60. The importance of agriculture in the United States?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

61. The developments in agriculture as the result of technology, war, decreasing number of farms, the amount of farm land, and the misuse of farm lands?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

62. The problems facing the farmer, e.g. his rising costs, the fluctuating prices for his products, the trend to larger farms, and the changing consumer demand?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

63. The international aspects of United States agriculture in relation to surpluses, competition of foreign producers, and the effect of trade restrictions?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

64. The measures farmers adopted to meet their problems, e.g. self-help in the form of diversification and mechanization, and organization or governmental aids like price supports and education?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

65. The sources of income, e.g. labor, ownership of natural resources, possession of capital, using skills and knowledge?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

66. The factors determining unequal distribution of income, such as skills, education, kinds of resources, inheritance, savings, luck, variations in supply and demand?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

67. The factors tending toward more equal distribution of income, e.g. collective bargaining, minimum wage laws, government aid to special groups, income taxes and others like it, old age assistance, education for all?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

68. The pattern and trends of income distribution?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

69. The advantages of permitting differences of income?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

70. Occupational information?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

h in the following areas: (indicate by checkmarks)

The use of income by budgeting, owning versus renting, and wise buying among goods of the same kind (quality, etc.)?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

Savings and investments, e.g. durable goods -- including homes, insurance and annuities, savings accounts, credit unions, owning a business, stocks and bonds, hoarding, U. S. bonds?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

The use of credit (getting into debt) by charge accounts, installment buying, personal loans and mortgages?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

The mass effect of earning and spending on our whole economy?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

The causes of economic insecurity, such as unemployment, sickness, accidents, death, old age, loss of income?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

Private industry's methods of dealing with economic insecurity (pension plans, insurance, guaranteed wages, retraining programs)?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

How the individual deals with economic insecurity, e.g. savings, insurance, borrowing, group action?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

Governmental measures for economic security, such as unemployment insurance, old age insurance, workmen's compensation, minimum wage laws, public housing, public health facilities?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

The nature of "booms" and "busts"?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

The history of U.S. economic fluctuations?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

The effect of depressions on incomes, employment, and the waste of resources?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

teach in the following areas: (indicate by checkmarks)

82. The effects of inflation on debtors, creditors, unorganized labor, people with fixed income, and business incentives?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

83. The causes for the ups and downs in business?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

84. The effect of war upon economic stability?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

85. What is being done to achieve a more stable economy (by business, labor and government)?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

86. The role of local and state government in economic stability?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

87. The importance of U.S. stability (economic) to world economic stability?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

88. Why we have trade?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

89. The importance of world trade to U.S. and to local communities?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

90. The dependence of exports upon imports?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

91. The influence of the U.S. economy upon other nations as the supplier or buyer of goods and services?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

92. The effect of the U.S. economy upon other countries in regard to depressions, development of natural resources, etc.?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

ısidering the grades you teach, how thoroughly did you
ch in the following areas: (indicate by checkmarks)

How a country pays for the goods and services which it purchases from other countries?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

The factors decreasing world trade, e.g. fear of foreign competition, backward countries, fear of economic dependence, fear of war, the "dollar gap"?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

How U.S. aids world trade?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

The basic economic problem of all systems (use of scarce resources to satisfy as many needs as possible)?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

The economic problems facing all societies, e.g. what to produce and what not to, how to produce it, how much to save, how to share income?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

. The basic similarities of all types of economic systems (use of basic resources and specialization)?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

. How economic systems differ, for example: Who makes the decisions? Who owns the resources? How is it organized? What are the economic incentives?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

. The various types of economic systems, such as democratic-capitalism (U.S.), private capitalism with state control (pre-war Germany), semi-socialized (Sweden), state ownership and state control of all (USSR)?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

. The economic problems of world population and productive resources?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

. The effects of the standard of living on the size of the population?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

3. The densities of population and living standards in various regions and countries?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

teach in the following areas: (indicate by checkmarks)

.04. World population trends and the demand for American products?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

.05. Population movements in the United States?
not at all.... ____
mentioned it. ____
partially.... ____
thoroughly.. ____

*** *** *** ***

WHAT COURSES OR AREAS OF STUDY DO YOU TEACH?

DO YOU HAVE SOME SUGGESTIONS FOR THE IMPROVEMENT OF THIS QUESTIONNAIRE?

APPENDIX B

BASIC DATA REPORTED IN FIFTY-THREE CHI-SQUARE COMPUTATIONS

APPENDIX B

BASIC DATA REPORTED IN FIFTY-THREE CHI-SQUARE COMPUTATIONS

The formula and the procedure used with the "2 x 2" tables below are adapted from Business Statistics by G. R. Davies and Dale Yoder.[1] The formula for the computation of chi-square is $\frac{N(bc-ad)^2}{efgh}$. The letters refer to places in the "2 x 2" table:

	Not taught	Taught	= Total
Group x(n)	a	b	g
Group y(n)	c	d	h
	e	f	N

In the solution of the formula the numerator and denominator were rounded off to the nearest tenth of a billion. The numbers in parenthesis refer to the number of teachers reporting in each group. The Yates correction was not used since there was no expected frequency below five.[2]

Illustrated below is the first chi-square computed. The calculations are shown with this illustration only:

	Not taught	Taught	= Totals
No economics (3)	303	3	306
Elements (8)	738	78	816
Totals	1047	81	1122

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[1]George R. Davies and Dale Yoder, Business Statistics. (New York, 1941). pp. 362-363 and 509.

[2]Quinn McNemar. Psychological Statistics, Second Edition. (New York, 1955), pp. 224-225. ". . . no expected frequency shall be less than 5 still holds. A quick check can be obtained by multiplying the smaller right hand marginal frequency by the smaller frequency on the bottom margin and dividing the product by N."

$$\text{Chi-square} = \frac{N(bc-ad)^2}{efgh} = \frac{514.8 \text{ billion}}{21.05 \text{ billion}} = 24.45.$$

.1% chi-square value = 10.83. The difference is significant. There is less than one chance in a thousand that the difference is due to random variations. That group of teachers in the primary grades having had Elements of Economics reported teaching significantly more concepts than that group having had no formal economics education.

The general hypothesis being tested by the use of fifty-three specific null hypotheses is that the economic education of the teachers makes no difference in the number of basic areas of economic understanding reported taught. The fifty-three chi-square tests below were formed by classifying the teachers into the indicated groups and comparing the total concepts reported by one group of teachers with total of another group.

Results of Specific Hypotheses Tested

A. In the primary grades groups of teachers with the indicated economic education were compared and the results are given below:

1. "No economics" versus "Elements."

	Not taught	Taught	Total
No economics (3)	303	3	306
Elements (11)	738	78	816
Totals	1041	81	1122

Chi-square = 24.45. .1% chi-square value = 10.83. The difference is significant.

2. "No economics" versus "three hours of Principles, only."

	Not taught	Taught	Total
No economics (3)	303	3	306
Principles (18) (3 hours)	1759	77	1836
Totals	2062	80	2142

Chi-square = 6.87. 1% chi-square value = 6.64. The difference is significant but none too reliable because of the small number reporting having had no economics.

3. "Elements" versus "three hours of Principles, only."

	Not taught	Taught	Total
Elements (8)	738	78	816
Principles (18) (3 hours)	1759	77	1836
Totals	2487	155	2652

Chi-square = 12.23. .1% chi-square value = 10.83. There is a significant difference.

B. In the intermediate grades teachers with the indicated economic education were compared and the results are given below:

1. "No economics" versus "Elements."

	Not taught	Taught	Total
No economics (11)	1058	64	1122
Elements (8)	449	61	510
Totals	1507	125	1632

Chi-square = 19.29. .1% chi-square value = 10.83. There is a significant difference.

2. "No economics" versus "three hours of Principles, only."

	Not taught	Taught	Total
No economics (11)	1058	64	1122
Principles (4) (3 hours)	373	35	408
Totals	1431	99	1530

Chi-square = 4.05. 5% chi-square value = 3.84. There is a significant difference although there is about one possibility in twenty that it is due to chance.

3. "No economics" versus "six hours of Principles, only."

	Not taught ≠	Taught =	Total
No economics (11)	1058	64	1122
Principles (3) (6 hours)	225	81	306
Totals	1283	145	1428

Chi-square = 113.09. .1% chi-square value = 10.83. There is a significant difference. However, since only three teachers reported in that group, reliability ought to be questioned.

4. "Elements" versus "three hours of Principles, only."

	Not taught ≠	Taught =	Total
Elements (5)	449	61	510
Principles (4) (3 hours)	373	35	408
Totals	822	96	918

Chi-square = 2.81. 5% chi-square value = 3.84. There is no significant difference at the 5% level.

5. "Elements" versus "six hours of Principles, only."

	Not taught ≠	Taught =	Total
Elements (5)	449	61	510
Principles (3) (6 hours)	225	81	306
Totals	674	142	816

Chi-square = 27.89. .1% chi-square value = 10.83. There is a significant difference. However, because of the number of teachers involved, reliability should be questioned.

6. "Three hours of Principles, only" versus "six hours of Principles, only."

	Not taught	Taught	Total
Principles (4) (3 hours)	373	35	408
Principles (3) (6 hours)	225	81	306
Totals	598	116	714

Chi-square = 40.95. .1% chi-square value = 10.83. There is a significant difference. However, because of the number of teachers involved, reliability should be questioned.

C. In the junior high school teachers with the indicated economic education were compared and the results are indicated below:

1. "No economics" versus "Elements."

	Not taught	Taught	Total
No economics (12)	1156	68	1224
Elements (2)	168	36	204
Totals	1325	104	1429

Chi-square = 38.41. .1% chi-square value = 10.83. There is a significant difference.[3] However, only two teachers had Elements and the reliability should be questioned.

2. "No economics" versus "three hours of Principles, only."

	Not taught	Taught	Total
No economics (12)	1156	68	1224
Principles (3) (3 hours)	251	55	306
Total	1408	123	1530

[3]In this case, if the number of teachers in Elements were increased to four with those added reporting with the lowest of the

Chi-square = 51.08. .1% chi-square value = 10.83. There is a significant difference. However, the reliability should be questioned because there are only three teachers in Principles.

3. "No economics" versus "six hours of Principles, only."

		Not taught	Taught	Total
No economics	(12)	1156	68	1224
Principles (6 hours)	(4)	318	90	408
Totals		1474	158	1632

Chi-square = 95.9. .1% chi-square value = 10.83. There is a significant difference.

4. "No economics" versus "more than six hours of economics."

	Not taught	Taught	Total
No economics (12)	1156	68	1224
Over six hours of economics (2)	170	34	204
Totals	1327	102	1428

Chi-square = 32.43. .1% chi-square value = 10.83. There is a significant difference. However, the reliability should be questioned because there are only two teachers in one class.

5. "Elements" versus "three hours of Principles, only."

		Not taught	Taught	Total
Elements	(2)	168	36	204
Principles (3 hours)	(3)	251	55	306
Totals		419	91	510

Chi-square = .0100. 5% chi-square value = 3.84. There is no significant difference. However, because of the numbers involved, the reliability should be questioned.

6. "Elements" versus "six hours of Principles, only."

	Not taught	Taught	= Total
Elements (2)	168	36	204
Principles (4) (6 hours)	318	90	408
Totals	393	117	612

Chi-square = .0106. 5% chi-square value = 3.84. There is no significant difference. However, because of the numbers involved, the reliability should be questioned.

7. "Elements" versus "more than six hours of economics."

	Not taught	Taught	= Total
Elements (2)	168	36	204
Over six hours of economics (2)	170	34	204
Totals	338	70	408

Chi-square = .0714. 5% chi-square value = 3.84. There is no significant difference. However, because of the numbers involved, the reliability should be questioned.

8. "Three hours of Principles, only," versus "six hours of Principles, only."

	Not taught	Taught	= Total
Principles (3) (3 hours)	251	55	306
Principles (4) (6 hours)	318	90	408
Totals	569	145	714

Chi-square = 1.835. 5% chi-square value = 3.84. The difference is not significant. However, because of the few teachers involved, the reliability should be questioned.

9. "Three hours of Principles, only," versus "more than six hours of economics."

	Not taught	Taught	Total
Principles (3) (3 hours)	251	55	306
Over six hours of economics (2)	170	34	204
Totals	421	89	510

Chi-square = .1453. 5% chi-square value = 3.84. There is no significant difference. However, because of the few teachers involved, the reliability should be questioned.

10. "Six hours of Principles, only," versus "more than six hours of economics."

	Not taught	Taught	Total
Principles (4) (6 hours)	318	90	408
Over six hours of economics (2)	170	34	204
Totals	488	124	612

Chi-square = 2.600. 5% chi-square value = 3.84. The difference is not significant. However, because of the few teachers involved, the reliability should be questioned.

D. In the high school teachers with the indicated economic education were compared and the results are given below:

1. "No economics" versus "Elements."

	Not taught	Taught	Total
No economics (28)	2579	277	2856
Elements (10)	907	113	1020
Totals	3486	390	3876

Chi-square = 1.58. 5% chi-square value = 3.84. The difference is not significiant.

2. "No economics" versus "three hours of Principles, only."

	Not taught	Taught	= Total
No economics (28)	2579	277	2856
Principles (16) (3 hours)	1461	171	1632
Totals	4040	448	4488

Chi-square = .7015. 5% chi-square value = 3.84. There is no significant difference.

3. "No economics" versus "six hours of Principles, only."

	Not taught	Taught	= Total
No economics (28)	2579	277	2856
Principles (11) (6 hours)	866	256	1122
Totals	3445	533	3978

Chi-square = 119.66. .1% chi-square value = 10.83. There is a significant difference.

4. "No economics" versus "more than six hours of economics."

	Not taught	Taught	= Total
No economics (28)	2579	277	2856
Over six hours of economics (5)	409	101	510
Total	2988	378	3366

Chi-square = 44.22. .1% chi-square value = 10.83. There is a significant difference.

5. "Elements" versus "three hours of Principles, only."

	Not taught	Taught	= Total
Elements (10)	907	113	1020
Principles (16) (3 hours)	1461	171	1632
Totals	2368	284	2652

Chi-square = .2368. 5% chi-square value = 3.84. There is no significant difference.

6. "Elements" versus "six hours of Principles, only."

	Not taught	Taught	= Total
Elements (10)	907	113	1020
Principles (11) (6 hours)	866	256	1122
Totals	1773	369	2142

Chi-square = 50.74. .1% chi-square value = 10.83. There is a significant difference.

7. "Elements" versus "more than six hours of economics."

	Not taught	Taught	= Total
Elements (10)	907	113	1020
Over six hours of economics (5)	409	101	510
Totals	1316	214	1530

Chi-square = 21.44. .1% chi-square value = 10.83. There is a significant difference.

8. "Elements" versus "more than six hours of Agricultural Economics."

	Not taught	Taught	= Total
Elements (10)	907	113	1020
Over six hours of Ag. Econ. (23)	1116	700	1816
Total	2023	813	2836

Chi-square = 240.75. .1% chi-square value = 10.83. There is a significant difference.

9. "Three hours of Principles, only," versus "six hours of Principles, only."

		Not taught	Taught	= Total
Principles (3 hours)	(16)	1461	171	1632
Principles (6 hours)	(11)	866	256	1122
Totals		2327	427	2754

Chi-square = 77.09. .1% chi-square value = 10.83. There is a significant difference.

10. "Three hours of Principles, only," versus "more than six hours of economics."

		Not taught	Taught	= Total
Principles (3 hours)	(16)	1461	171	1632
Over six hours of economics	(5)	409	101	510
Totals		1870	272	2142

Chi-square = 30.31. .1% chi-square value = 10.83. There is a significant difference.

11. "Three hours of Principles, only," versus "more than six hours of agricultural economics."

		Not taught	Taught	= Total
Principles (3 hours)	(16)	1461	171	1632
Over six hours of Ag. Econ.	(23)	1116	700	1816
Totals		2577	871	3448

Chi-square = 358.26. .1% chi-square value = 10.83. There is a significant difference.

12. "Six hours of Principles, only," versus "more than six hours of economics."

		Not taught	Taught	= Total
Principles (6 hours)	(11)	866	256	1122
Over six hours of economics	(5)	409	101	510
Totals		1275	357	1632

Chi-square = 1.858. 5% chi-square value = 3.84. The difference is not significant.

13. "Six hours of Principles, only," versus "more than six hours of agricultural economics."

		Not taught	Taught	Total
Principles (6 hours)	(11)	866	256	1122
Over six hours of Ag. Econ.	(23)	1816	530	2346
Total		2682	786	3468

Chi-square = .0218. 5% chi-square value = 3.84. There is no significant difference.

14. "More than six hours of economics" versus "more than six hours of agricultural economics."

		Not taught	Taught	Total
Over six hours of economics	(5)	409	101	510
Over six hours of Ag. Econ.	(23)	1816	530	2346
Totals		2225	613	2856

Chi-square = 1.89. 5% chi-square value = 3.84. The difference is not significant.

E. When those teachers with no economics are compared by school levels, the results are given below:

1. Primary grades versus intermediate grades.

		Not taught	Taught	Total
Primary	(3)	303	3	306
Intermediate	(11)	1058	64	1122
Totals		1361	67	1428

Chi-square = 11.96. .1% chi-square value = 10.83. There is a significant difference.

2. Intermediate grades versus junior high school.

	Not taught	Taught	= Total
Intermediate (11)	1058	64	1122
Junior High (12)	1156	68	1224
Totals	2214	132	2346

Chi-square = .0274. 5% chi-square value = 3.84. There is no significant difference.

3. Junior high school versus high school.

	Not taught	Taught	= Total
Junior High (12)	1156	68	1224
High School (28)	2579	277	2856
Totals	3735	345	4080

Chi-square = 15.39. .1% chi-square value = 10.83. There is a significant difference.

F. When those teachers who have had Elements are compared by school levels, the results are given below:

1. Primary grades versus intermediate grades.

	Not taught	Taught	= Total
Primary (8)	738	78	816
Intermediate (5)	449	61	510
Totals	1187	139	1326

Chi-square = 1.930. 5% chi-square value = 3.84. The difference is not significant.

2. Intermediate grades versus junior high school.

	Not taught	Taught	= Total
Intermediate (5)	449	61	510
Junior High (2)	168	36	204
Totals	617	97	714

Chi-square = 4.01. 5% chi-square value = 3.84. There is a significant difference. However, the reliability should be questioned because of the few teachers in the junior high group.

3. Junior high school versus high school.

	Not taught	Taught	Total
Junior High (2)	168	36	204
High School (10)	907	113	1020
Totals	1075	149	1224

Chi-square = 6.94. 1% chi-square value = 6.64. There is a significant difference. However, the reliability should be questioned because of the few teachers in the junior high group.

G. When those teachers who have had "three hours of Principles, only," are compared by school levels, the results are given below:

1. Primary grades versus intermediate grades.

	Not taught	Taught	Total
Primary (18)	1759	77	1836
Intermediate (4)	373	35	408
Totals	2132	112	2244

Chi-square = 13.53. .1% chi-square value = 10.83. There is a significant difference.

2. Intermediate grades versus junior high school.

	Not taught	Taught	Total
Intermediate (4)	373	35	408
Junior High (3)	251	55	306
Totals	624	90	714

Chi-square = 14.00. .1% chi-square value = 10.83. There is a significant difference.

3. Junior high school versus high school.

	Not taught	Taught	= Total
Junior High (3)	251	55	306
High School (16)	1461	171	1632
Totals	1712	226	1938

Chi-square = 14.07. .1% chi-square value = 10.83. There is a significant difference. However, the reliability should be questioned because of the few teachers reporting in the junior high group.

H. When those teachers who have had "six hours of Principles, only," are compared by school levels, the results are given below:

1. Intermediate grades versus junior high schools.

	Not taught	Taught	= Total
Intermediate (3)	225	81	306
Junior High (4)	318	90	408
Totals	543	171	714

Chi-square = 1.91. 5% chi-square value = 3.84. The difference is not significant. The reliability should be questioned because of the few teachers involved.

2. Intermediate grades versus high school.

	Not taught	Taught	= Total
Intermediate (3)	225	81	306
High School (11)	866	256	1122
Total	1091	337	1428

Chi-square = 1.786. 5% chi-square value = 3.84. The difference is not significant. The reliability should be questioned because of the few teachers in the intermediate group.

3. Junior high school versus high school

		Not taught	Taught	= Total
Junior High	(4)	318	90	408
High School	(11)	866	256	1122
Totals		1184	346	1530

Chi-square = .0856. 5% chi-square value = 3.84. There is no significant difference.

I. When those teachers who have had "more than six hours of economics" are compared by school levels, the results are given below:

1. Junior high school versus high school.

		Not taught	Taught	= Total
Junior High	(2)	170	34	204
High School	(5)	490	101	510
Totals		579	135	714

Chi-square = 1.000. 5% chi-square value = 3.84. There is no significant difference. The reliability should be questioned because of the few teachers involved.

J. When those teachers in the area of Social Studies are compared by groups with the indicated economic education, the results are given below:

1. "Elements" versus "three hours of Principles, only."

		Not taught	Taught	= Total
Elements	(2)	175	29	204
Principles (3 hours)	(2)	187	17	204
Totals		362	46	408

Chi-square = 4.80. 5% chi-square value = 3.84. There is a significant difference. The reliability should be questioned

because of the few teachers involved.

2. "Elements" plus "three hours of Principles, only," versus "six hours of Principles, only."

		Not taught	Taught	Total
The two three hour courses	(4)	362	46	408
Principles (6 hours)	(5)	330	180	510
Totals		692	226	918

Chi-square = 70.55. .1% chi-square value = 10.83. There is a significant difference.

K. When those teachers teaching business (typing and shorthand not included) are compared by the difference in economic education, the difference between the two groups is given below:

1. "Six hours of Principles, only," versus "more than six hours of economics."

		Not taught	Taught	Total
Principles (6 hours)	(3)	201	105	306
Over six hours of economics	(2)	136	68	204
Totals		337	173	510

Chi-square = .0531. 5% chi-square value = 3.84. There is no significant difference. The reliability should be questioned because of the few teachers involved.

L. When those teachers teaching business (typing and shorthand not included) are compared with those teachers teaching social studies the difference between the groups of teachers being compared is given below:

1. All in business versus all in social studies.

		Not taught	Taught	Total
All business	(6)	421	191	612
All social studies	(11)	803	319	1122
Totals		1224	510	1734

Chi-square = 1.47. 5% chi-square value = 3.84. The difference is not significant.

2. Teachers with six or more hours of economics.

		Not taught	Taught	Total
Business	(5)	337	173	510
Social Studies	(6)	398	214	612
Totals		735	387	1122

Chi-square = .1346. 5% chi-square value = 3.84. There is no significant difference.

M. When those teachers teaching social studies are compared with those teachers teaching communication arts the difference in the total concepts reported taught by each group is given below:

1. All in social studies versus all in communication arts.

		Not taught	Taught	Total
Social studies	(11)	803	319	1122
Communication Arts	(16)	1347	81	1428
Totals		2150	400	2550

Chi-square = 216.53. .1% chi-square value = 3.84. There is a significant difference.

N. When those teachers teaching business (typing and shorthand not included) are compared with those teachers teaching vocational

agriculture the difference in the total concepts reported taught by each group of teachers is given below:

1. All in business versus all in vocational agriculture.

		Not taught	Taught	= Total
Business	(6)	421	191	612
Vocational Agr.	(22)	1695	701	2396
Totals		2116	892	3008

Chi-square = .8905. 5% chi-square value = 3.84. There is no significant difference.

VITA

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Candidate for the Degree of

Doctor of Education

Thesis: THE EFFECT OF THE ECONOMIC EDUCATION OF TEACHERS ON THE NUMBER OF ECONOMIC CONCEPTS REPORTED TAUGHT

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